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MICROSOFT CORPORATION ONE MICROSOFT WAY REDMOND, WA 98052-6399			BAYARD, DJENANE M	
			ART UNIT	PAPER NUMBER
			2141	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

09/714,406

Applicant(s)

BAHL ET AL.

Examiner

Djenane M. Bayard

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 20 and 23-25, 27-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 20, 23-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is in response to communication filed on 11/02/07 in which claims 1-15 and 20, 23-25, 27-29 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-15, 20, 23-25, 27-29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 11 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored in a computer-readable medium, in a computer, on an electromagnetic carrier signal does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-15, 20, 23-25 and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,671,259 to He et al in view of U.S. Patent application No. 2005/0022203 to Zisapel et al.

a. As per claim 1, He et al teaches a system for performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the system comprising: one of a plurality of load balancing domain name servers (DNS-LBs) (See col. 5, lines 59-61 and col. 4, lines 66-67), the DNS-LBs having stored therein IP address information of the multiple globally-dispersed servers to be load balanced (See col. 10, lines 15-32), the (DNS-LBs) each sending mapping information to the DNS-B relating the DNS-LB's IP address to an IP address of the DNS-ISP to which it is in a physical proximity from which the actual network latency of the clients may be measured, (See col. 7, lines 29-34), the DNS-LBs determining performance characteristics of each of the multiple globally-dispersed servers (See col. 9, lines 66-67 and col. 10, lines 1). (Remarks: The LB server and the LBS selector perform the function of domain name server since they translate domain names into Internet Protocol (IP)

address or numbers), a DNS-LB receiving DNS lookup requests sent from its respective physically-proximate clients to the DNS-LB's corresponding DNS_ISP, the DNS lookup request comprising respective hostnames of some of the globally-dispersed servers, the DNS-LB using its measurements of actual network latency to resolve the DNS lookup requests to respective IP addresses of the some of the globally-dispersed servers, where DNS lookup request's hostname can be resolved to multiple of the IP addresses and the DNS-LB returns to the client the IP address that has lower network latency (See col. 4, lines 5-24 and col. 6, lines 30-67). However, He et al fails to teach wherein the DNS are placed in physical proximity producing network latency similar to the clients.

Zisapel et al teaches a load balancing system. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

b. As per claim 2, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines

29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address to the DNS-ISP of the server having the best performance characteristics (See col. 4, lines 5-15).

c. As per claim 3, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines 29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address of the DNS-LB to the DNS-ISP (See col. 4, lines 1-4).

d. As per claim 4, He et al teaches wherein the DNS-B provides its IP address information to the DNS-A to enable the DNS-A to forward IP address queries to the DNS-B (See col. 5, lines 50-52).

e. As per claim 5, He et al teaches wherein the DNS-B receives IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-7).

f. As per claim 6, He et al teaches wherein the DNS-LB is a client of the DNS-ISP (See col. 5, lines 29-39).

g. As per claim 7, He et al teaches wherein a DNS-B deployed on each Internet backbone, and wherein each DNS-B contains the mapping information for all of the DNS-LBs stored therein (See col. 10, lines 15-32).

- h. As per claim 8, He et al teaches wherein the DNS-LB transmits updated mapping information upon a change of an IP address of the DNS-ISP (See col. 6, lines 14-27).
- i. As per claim 9, He et al teaches wherein each of the DNS-LBs transmit performance information of the servers to the DNS-B, and wherein the DNS-B utilizes the mapping information to determine the proper DNS-LB (See col. 10, lines 15-32) performance information to utilize to select the IP address of the server having the best performance characteristics to return to the DNS-ISP from which an IP address query originated (See col. 11, lines 60-67).
- j. As per claim 10, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the method comprising the steps of receiving IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-13); providing the IP address information to a plurality of load balancing domain name servers (DNS-LB) (See col. 11, lines 20-22); receiving mapping information associating DNS-ISP IP address information to IP address information of a proximately located DNS-LB capable of determining server performance from a location physically proximate to the ISP's point of presence and referring DNS address inquiries from a DNS-ISP to a physically proximate DNS-LB in accordance with the mapping information (See col. 9, lines 27-67), a DNS address inquiry comprising a hostname corresponding to multiple of

the globally-dispersed servers, and wherein the DNS-LB selects one of the multiple servers according to the DNS-LB's determining of server performance and answers the DNS address inquiry by returning the IP address of the selected server (See col. 4, lines 5-24 and col. 6, lines 30-67). However, wherein the DNS are placed in physical proximity from which the actual network latency of the clients may be measured

Zisapel et al teaches a load balancing system. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

k. As per claim 11, He et al teaches a computer-readable medium having computer executable-instructions (See col. 10, lines 44-55).

l. As per claim 12, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49); receiving IP address information for the servers (See col. 10, lines 23-25); monitoring

performance of the servers at the received IP addresses (See col. 7, lines 55-60) by the DNS-LB transmitting communications to the IP addresses of the servers; receiving at the DNS-LB a DNS name query querying for an IP address of a hostname that corresponds to multiple of the servers (See col. 4, lines 5-24 and col. 6, lines 30-67); and providing at least one IP address for a server in response to the DNS name query by selecting the server, based on the monitoring step from among the multiple servers that correspond to the hostname, and by returning the IP address for the selected server.(See col. 5, line 66-67 and col. 6, lines 30-67). However, He et al fails to teach obtaining, by a load balancing domain name server (DNS-LB), IP address information for a DNS-ISP located in close physical proximity to the DNS-LB; providing a mapping of an IP address of the DNS-LB to the IP address information of the DNS-ISP to an external domain name server and wherein the DNS are placed in physical proximity from which the actual network latency of the clients may be measured.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

m. As per claim 13, He et al teaches a method further comprising the steps of detecting a change in the DNS-ISP IP address; and updating the mapping of the IP address of the DNS-LB to the IP address information of the DNS-ISP to the external domain name server (See col. 9, lines 13-67).

n. As per claim 14, He et al teaches wherein comprising the steps of receiving selection criteria for the selection of an IP address; receiving a name query from the DNS-ISP (See col. 5, lines 47-49); and wherein the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step further comprises the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step and on the selection criteria (See col. 5, line 66-67 and col. 6, lines 1).

o. As per claim 15, He et al teaches a computer-readable medium having computer-executable instructions (See col. 10, lines 44-55).

p. As per claim 20, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed content servers for handling content requests from clients, the servers being accessed by clients connecting through an Internet service providers (ISPs) point of presence (POP), (See col. 5, lines 45-49), the ISP having a domain name server (DNS-ISP), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49), the method comprising the steps of: deploying a plurality of load balancing domain name servers

(DNS-LBs) in close physical proximity to the ISP POPS (See col. 5, lines 59-61 and col. 4, lines 66-67); communicating IP address information for a plurality of second level domain name servers (DNS-B's) to the DNS-As to enable the DNS-As to refer name queries to the DNS-Bs; monitoring, by the DNS-LBs at a location physically proximate to the ISP POP, performance of the servers (See col. 7, lines 55-60); receiving at a DNS-LB a DNS name query that was sent from one of the clients to the DNS-ISP, the DNS name query querying for an IP address of a hostname that corresponds to multiple of the servers, the DNS name query having been sent from the client in response to the client starting a service request needing an IP address for the hostname (See col. 4, lines 4-24 and col. 6, lines 30-67); and providing, by the DNS-LB in response to a query from the DNS-ISP, the IP address of a server by selecting the IP address from among the IP addresses of the multiple of the servers based on the step of monitoring (See col. 9, lines 66-67 and col. 10, lines 1). However, He et al fails to teach providing, by the DNS-LBs to the DNS-B, mapping information associating an IP address of the DNS-LB to an IP address of the physically proximate DNS-ISP to enable the DNS-B to refer name queries from a DNS-ISP to the physically proximate DNS-LB and communicating IP address information of the servers to the DNS-LBs and wherein the DNS are placed in physical proximity from which the actual network latency of the clients connecting to the ISP POPS may be measured.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and

sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

q. As per claim 23, He et al teaches a method for load balancing: content servers, each of the content servers being associated with a same domain name, the method comprising: receiving a DNS request to resolve the domain name from an ISP DNS server; identifying at least one load balancing server from a group of load balancing servers (See col. 5, lines 54-67); sending the IP address of the identified load balancing server to the ISP DNS server, the identified load balancing server configured to select at least one of the content servers and to resolve the domain name with an IP address associated with the selected content server (See col. 4, lines 4-24, col. 6, lines 30-67 and col. 5, lines 45-63). However He et al fails to explicitly teach wherein the identified load balancing server measures network latency from the load balancing servers to the content servers and the identified load balancing server configured to select, based on its measuring of network latency at least one of the content server.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the identified load balancing server measures network latency from the load balancing servers to the content servers and the identified load balancing server configured to select, based on its measuring of network latency at least one of the content server (See page 4, paragraph [0040-0042]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and

sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

r. As per claims 24 and 27, He et al in view of Zisapel et al teaches the claimed invention as described above. However, He et al fails to teach wherein the certain characteristics include load level, availability, network latency, or network cost.

Zisapel et al teaches wherein the certain characteristics include load level, availability, network latency, or network cost (See page 4, paragraph [0040]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the certain characteristics include load level, availability, network latency, or network cost as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

s. As per claim 25, He et al in view of Zisapel et al teaches the claimed invention as described above. However, He et al fails to teach wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers.

Zisapel et al teaches wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the identified load balancing server is situated closest to the

ISP DNS server among the group of load balancing servers as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farms site or sites to which request from a particular subnet should be routed (See page 4, paragraph [0038]).

t. As per claim 28, He et al teaches a method performed by a DNS-ISP that provides DNS service for a plurality of clients, the method comprising: receiving from a client a lookup request requesting an IP address for a web server having a hostname specified by the request (See col. 3, lines 56-58); in response to receiving the client request, determining that an IP address for the requested hostname is needed and in response issuing a DNS query for the hostname (See col. 3, lines 56-64).; in response to issuing the DNS query for the hostname by the DNS-ISP, receiving a redirection to an authoritative DNS server (DNS-A) that corresponds to the hostname, the referral providing an IP address of a domain name service load-balancing server (DNS-LB) and causing the DNS-ISP to query the DNS-LB for the IP address of the hostname in the client request (See col. 6, lines 30-50); in response to querying the DNS -LB, receiving the IP address form the DNS-LB, and sending the IP address received form the DNS-LB to the client that sent the lookup request for the web server having the hostname specified by the request (See col. 6, lines 43-49). However, He et al fails to teach where the IP address was selected by the DNS-LB based on transmissions form the DNS-LB to the IP address that measure network latency from the DNS-LB to the IP address of the server.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

u. As per claim 29, He et al teaches a method performed by a load-balancing domain name service server (DNS-LB) that provides load balancing service for a plurality of clients, the method comprising: receiving at the DNS-LB a request received by and forwarded from a domain name service server of an Internet Service Provider (DNS-ISP), the request having been sent by a client of the DNS-ISP, the request containing a hostname corresponding to a plurality of IP address of servers serving web content being requested by the request, where the request was forwarded by the DNS-ISP when the DNS-ISP (See col. 6, lines 30-49): determined that an IP address for the hostname was not cached at the DNS-ISP and obtained the IP address of the DNS-LB by issuing a DNS query for the hostname; in response to receiving the request of the client at the DNS_LB, selecting an IP address from among the IP addresses corresponding to the hostname, where the IP address is selected based on the measuring of network latency; and returning to the client the selected IP address to be used by the client to sent its request for web content to the IP address (See col. 3, lines 53-58 and col. 6, lines 30-49). However, He et al fails to teach measuring network latency form the DNS-LB to the one or more IP addresses corresponding to the hostname in the request by periodically sending communication form the DNS-LB to the one or more IP addresses.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djenane M. Bayard whose telephone number is (571) 272-3878. The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

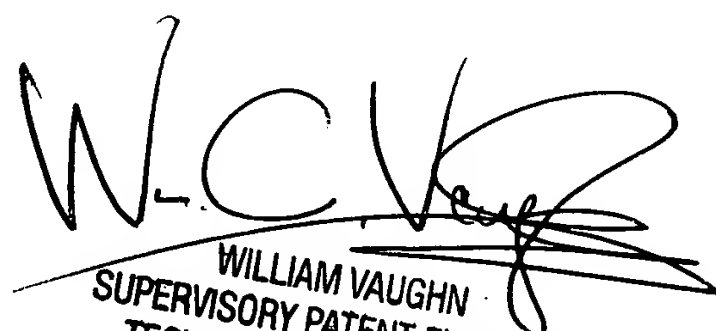
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Djenane Bayard

Patent Examiner


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